

IS0537-01  
03/17/2009

**Tomar Scorpion<sup>TM</sup>**  
**970L Lightbar**  
**Operational & Programming Instructions**



**Programming Warning & Directional Modes Using The Lightbar Control Cable or The 940-DCP Digital Control Panel**

The 970L Lightbar flash patterns may be custom programmed by using the Lightbar Control Cable, or by using either the TOMAR 940-DCP Digital Control Panel or the TOMAR 940-SIREN Siren Amp & Digital Control Panel.

The 970L Lightbars have a wide variety of Flash Patterns built into the 970L-CONTROLLER. Using EEPROM flash memory, the 970L-CONTROLLER can be reprogrammed many times. The 970L-CONTROLLER allows for independent programming of the Front, Rear, and Side Lamps. Factory set patterns & a complete list of programmable patterns are detailed in Appendix A for the length of 970L Lightbar you have ordered.

There are two ways to activate the control wires for the 970L lightbar. The first method is to control the lightbar by using a progressive slide switch. The second method is to control the lightbar using independent rocker or on/off switches. Program the lightbar for all the individual and or wire combinations which will be used in this installation.

**Programming Warning Modes Using The Lightbar Control Cable**  
**Entering Warning Mode Programming**

To activate the lightbar programming mode:

GROUND the 10 AWG BLACK power wire.

Apply +12vdc to the 12 AWG RED power wire & the GRN control wire.

**Selecting the Warning Mode to Program**

Apply +12vdc to program the desired Mode wire combinations, see the switching examples below.

NOTE: All 7 possible combinations of the 3 warning mode wires (ORG, BLU, WHT/BLK) can be programmed uniquely. If two or more wires are to be activated simultaneously, the wire combination must be programmed as well. The last flash pattern programmed before exiting the programming mode becomes the operational setting.

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**Example - Program Progressive Slide Switch**

Mode 1 – ORG

Mode 2 – ORG + BLU

Mode 3 – ORG + BLU + WHT/BLK

Apply +12vdc to:

ORG

ORG + BLU

ORG + BLU + WHT/BLK

**Example - Program Independent Switch**

Mode 1 – ORG

Mode 2 – BLU

Mode 3 – WHT/BLK

Apply +12vdc to:

ORG

BLU

WHT/BLK

**Advancing Selectable Warning Mode Patterns and Flash Rates**

Once Warning Mode Programming has been entered and the Mode to be programmed activated, tap (apply and remove) the appropriate wire to advance through the available flash patterns and flash rates. Continue until the desired activation is selected.

**Advancing Warning Pattern Selection:**

Tapping the **RED/WHT** wire advances the **REAR** Warning Lamp patterns.

Tapping the **BRN/WHT** wire advances the **FRONT** Warning Lamp patterns.

Tapping the **GRAY** wire advances the **SIDE** Warning Lamp patterns.

**Advancing Warning Flash Rate Selection:**

Tapping the **RED/WHT + WHT** wire advances the **REAR** Flash Rate.

Tapping the **BRN/WHT + WHT** wire advances the **FRONT** Flash Rate.

Tapping the **GRAY + WHT** wire advances the **SIDE** Flash Rate.

**Advancing Optional Features (if ordered):**

These optional Steadyburn Light features are programmed to be OFF or FLASHING in warning modes. In normal operation, activation of a Steadyburn light overrides this warning mode.

Tapping the **BRN** wire toggles the **Takedown Light** between **OFF** and **Flashing**.

Tapping the **VIO** wire toggles the **Rearwork Light** between **OFF** and **Flashing**.

Tapping the **YEL** wire toggles the **Alley Lights** between **OFF** and **Flashing**.

Repeat for each Warning Mode wire and or combinations of Warning Mode wires.

To Exit Warning Mode Programming, remove power from all 970L power and control wires.

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### **Entering Traffic Direction Mode Programming**

To activate the lightbar traffic direction programming mode:

GROUND the 10 AWG BLACK power wire.

Apply +12vdc to the 12 AWG RED power wire & the GRN control wire,  
then apply +12vdc to the RED/WHT (Right Arrow) control wire.

NOTE: The Traffic Direction modes are (RED/WHT) Right Arrow, (BRN/WHT) Left Arrow and (RED/WHT + BRN/WHT) Center Out. Only one Traffic Direction Mode, either Right Arrow or Left Arrow need be programmed to program the Traffic Direction Modes. Traffic Direction modes are only available when at least six 970 LED modules are configured to the Rear of the 970L Lightbar.

Once Traffic Programming Mode has been entered, tap (apply and remove) the appropriate wire to advance through the available traffic flash patterns and rates. Continue until the desired activation is selected.

### **Advancing Traffic Pattern Selection:**

Tapping the **WHT/BLK** wire advances the **DIRECTION** patterns.

### **Advancing Traffic Flash Rate Selection:**

Tapping the **WHT/BLK + WHT** wire advances the **DIRECTION** Flash Rate.

To Exit Traffic Direction Mode Programming, remove power from all 970L power and control wires.

# Tomar 970L Scorpion™ Lightbar Programming Instructions

## Using the 940-DCP Digital Control Panel or the 940-Siren Amp & Control Panel

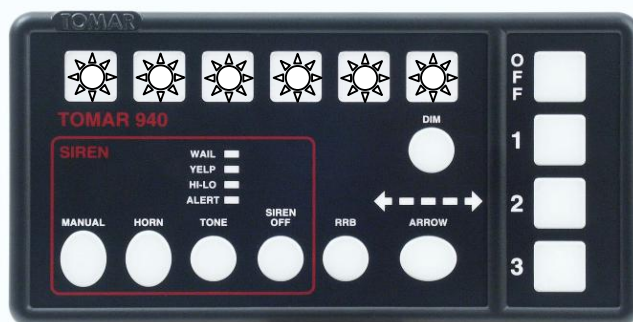
**Connecting to the 970L LED Controller: REMOVE POWER.** Unscrew the lamp at the rear passenger side of the Lightbar. Locate the 970L LED Controller and connect the DB9 receptacle of the Tomar DB9-RJ45-Cable. Then connect the RJ-45 modular plug directly to the 940-DCP, or the 940-Siren Amp & Control Panel via the Slave RJ-45 port on the rear panel. If any Lightbar control wires are connected by any other method then the 940-Siren Amp & Control Panel -- DO NOT activate any while in programming mode. Apply and maintain main power to the Lightbar.

### A. Activate Lightbar Programming Mode

1. Activate the Lightbar Program Mode by simultaneously pressing the TONE + SIREN OFF + OFF switches and hold for two seconds



2. Programming switches 1-6 will blink three times to indicate successful activation of programming mode.



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## B. Programming Progressive Mode Switches

### 1. Program a Mode:

Example: Begin programming the Mode 1 warning pattern by pressing mode Switch 1.



(a) Selecting Flash Pattern: Select the Mode 1 warning pattern by pressing the appropriate switch as listed below. Each press advances the pattern one step. Continue until the desired pattern is selected.

Pressing Programming switch 1 advances the Front Warning Lamps  
Pressing Programming switch 3 advances the Rear Warning Lamps  
Pressing Programming switch 5 advances the Side Warning Lamps

(b) Selecting Flash Rate: Select the Mode 1 flash rate by pressing the appropriate switch as listed below. Each press advances the flash rate one step. Continue until the desired flash rate is selected.

Pressing Programming switch 2 switch advances the Front Flash Rate  
Pressing Programming switch 4 switch advances the Rear Flash Rate  
Pressing Programming switch 6 switch advances the Side Flash Rate

(c) Selecting Flashing warning mode for Optional TD/RW/A Lights (if ordered):

To program, toggle the optional TD/RW/A Lights to be OFF or FLASHING in Warning Modes. In normal operation, activation of a TD/RW/A light overrides this Flashing warning mode.

Press & hold DIM then press Programming switch 1 to toggle the Takedown Light (TD)  
Press & hold DIM then press Programming switch 3 to toggle the Rearwork Light (RW)  
Press & hold DIM then press Programming switch 5 to toggle the Alley Lights (A)

Repeat the above steps for each Warning mode; Mode 1, 2 & 3.



(d) Warning patterns and flash rates are now set for Modes 1, 2 & 3 when selected.

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## C. Programming Traffic Direction Modes:

1. Program Rear Warning In Traffic Direction Modes: Select an arrow pattern by pressing the Arrow switch



- (a) Select Traffic Direction Pattern by pressing Programming switch 1. Each press advances the pattern one step. Continue until the desired pattern is selected.
- (b) Selecting Traffic Direction Flash Rate by pressing Programming switch 2. Each press advances the flash rate one step. Continue until the desired flash rate is selected.
- (c) Flash pattern and rate are now set for Traffic Direction Mode when selected.

**D. EXIT Programming Mode:** Press the OFF switch TWICE, once to disable the Lightbar, once to exit the 940 program mode.